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January 27, 2005

U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
Response to NRC Request for Additional Information Regarding our Response to Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors"

REFERENCES:

(a) Letter from Mr. R. V. Guzman (NRC) to Mr. G. Vanderheyden (CCNPP), dated December 28, 2004, Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (CCNPP 1 and 2) – Request for Additional Information Re: Bulletin 2004-01 (TAC Nos. MC3466 and MC3467)

(b) Letter from Mr. K. J. Nietmann (CCNPP) to Document Control Desk (NRC), dated July 27, 2004, Response to NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors"

The purpose of this letter is to provide Calvert Cliffs Nuclear Power Plant, Inc.'s (CCNPP's) responses to Nuclear Regulatory Commission's request for additional information (Reference a) regarding the CCNPP's response to Nuclear Regulatory Commission Bulletin 2004-01 (Reference b). The requested information is provided below.

Requested Information 1:

Your response to Bulletin 2004-01 Question (1)(c) did not clearly communicate your intentions with respect to establishing a voluntary dialogue with Nuclear Regulatory Commission (NRC) technical staff in the event that circumferential primary water stress corrosion cracking (PWSCC) is identified at any locations covered under the scope of Bulletin 2004-01. Please clarify your intentions in this regard.

CCNPP Response:

In the event that circumferential cracking is observed in either the pressure boundary or non-pressure boundary portions of any locations covered under the scope of Bulletin 2004-01, CCNPP will develop

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plans to perform an adequate extent-of-condition evaluation and CCNPP will discuss these plans with cognizant NRC technical staff prior to restarting the affected unit.

Requested Information 2:

In reference to Bulletin 2004-01 Question 1(b), for all circumferential flaw indications in your pressurizer heater sleeves that have been identified through nondestructive examination testing, provide the following additional information:

a) *Describe the flaw configuration by stating whether it was a through-wall (TW) flaw, an inner diameter (ID) originated surface flaw, or an outer diameter (OD) originated surface flaw. Provide the length for the TW flaw and the length and depth for the ID and OD originated surface flaws.*

b) *Specify the flaw location in the axial direction (the distance and direction with respect to the J-groove weld) and the circumferential direction (the distance in degrees between the crack center and the lowest downhill location).*

CCNPP Response:

Circumferential flaws were identified on the Unit 1 pressurizer heater sleeve FF-1 during the 1994 refueling outage. Leakage from the sleeve was identified from visual inspection and circumferential flaws were identified via eddy current testing. The sleeve was removed for additional metallurgical analysis. A copy of the metallurgical analysis report that contains the requested information is enclosed.

The results of the metallurgical analysis indicated the leakage from the heater sleeve FF-1 resulted from three axially oriented intergranular stress corrosion cracks located approximately one inch below outside of the pressurizer shell. In addition, a number of part through-wall circumferential intergranular stress corrosion cracks, extending up to 150° of the circumference, were also present below outside of the pressurizer. These cracks extended downward for approximately five inches to the region just above the threaded collar near the sleeve bottom. There were no indications of cracks in the part of the sleeve that was contained within the pressurizer shell. The stresses that caused the cracking probably resulted from damage caused by a reamer that became stuck during post-installation reaming of the sleeve during original construction.

The depth of the circumferential crack is not clear, but it was estimated to be at least 80% through-wall (refer to section 6 of the enclosed metallurgical analysis). All of the flaws were ID originated surface flaws.

Should you have questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,

STATE OF MARYLAND :
: **TO WIT:**
COUNTY OF CALVERT :

I, George Vanderheyden, being duly sworn, state that I am Vice President - Calvert Cliffs Nuclear Power Plant, Inc. (CCNPP), and that I am duly authorized to execute and file this response on behalf of CCNPP. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other CCNPP employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of Calvert, this 27th day of January, 2005.

WITNESS my Hand and Notarial Seal:

Deena L. Carnahan
Notary Public

DEENA L. CARNAHAN
My Commission
NOTARY
PUBLIC
Expires
04-15-2006
CALVERT COUNTY, MD

My Commission Expires: 4-15-06
Date

GV/GT/bjd

Enclosure: Examination of Heater Sleeve FF-1 from Calvert Cliffs Unit 1, May 1994

cc: R. V. Guzman, NRC

(Without Enclosure)
S. L. Miller, Esquire
J. E. Silberg, Esquire
S. J. Collins, NRC
Resident Inspector, NRC
R. I. McLean, DNR